DETAILED ACTION

Status of Claims

1. Claims 18-32 are currently under examination, wherein no claim has been amended and claims 27-32 have been newly added in applicant's amendment filed on December 7, 2011.

Status of Previous Rejections

2. The previous rejections of claims 18-26 under 35 U.S.C. 103(a) as stated in the Office action dated September 7, 2011 have been withdrawn in light of applicant's submission of information disclosure statements on December 28, 2011 and December 7, 2011 respectively. New grounds of rejections have been established as follows:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 18-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Purnell et al. (US 5,062,908) in view of JP (61-019703 A).

With respect to claims 18, 23, 28, 30 and 31, Purnell et al. ('908) discloses a process for manufacturing a metal-infiltrated powder metal part comprising compacting a metal powder to form a compact having a central opening extending axially there through and an annular top axially facing surface; forming an infiltrant blank from a wrought metal sheet, placing the infiltrant blank in contact with the compact; and heat-

treating (i.e. simultaneously sintering and infiltrating) the compact at a temperature sufficient to form a sintered compact with a matrix having pores and to melt the wrought metal such that the melted wrought metal infiltrate the pores of the matrix (col. 4, lines 35-52). Purnell et al. ('908) discloses that the infiltrant blank should be held in place prior to infiltration (col. 3, lines 18-21) without specifying the claimed feature of a locating element on the infiltrant blank that is suitable for engaging a corresponding locating element on the compact (e.g. an annular recess formed in the annular top axially facing surface as claimed) to restrict movements of the infiltrant blank relative to the compact. JP ('703 A) discloses forming by pressing an infiltrant blank having a location element that is suitable for engaging a corresponding annular recess formed in an annular top axially facing surface of a compact (abstract and Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an infiltrant metal sheet having a location element corresponding exactly in shape and position to an annular recess formed in an annular top axially facing surface of a compact in the process of Purnell et al. ('908) as disclosed by JP ('703 A) in order to prevent movements of the infiltrant blank relative to the compact as disclosed by JP ('703 A) (abstract).

With respect to claim 19, Purnell et al. ('908) discloses that the powder metal comprises iron and the wrought metal comprises copper (col. 4, lines 35-52).

With respect to claim 20, Purnell et al. ('908) discloses that the wrought metal sheet has a thickness of 0.55 mm (col. 4, lines 35-52) which is within the claimed range of less than 1 mm. A prima facie case of obviousness exists. See MPEP 2144.05 I.

With respect to claim 21, JP ('703 A) discloses that the infiltrant blank is formed by pressing in a mold (abstract), which would read on the instantly claimed forming the infiltrant blank by stamping.

With respect to claims 22 and 26, JP ('703 A) discloses that the infiltrant blank is provided with a section extending outwardly from the bottom of the blank to the top surface of the compact and contacting a wall of the compact (abstract and Fig. 1), which would read on the instantly claimed locating element.

With respect to claim 24, Purnell et al. ('908) further discloses sintering the compact at a temperature sufficient to form a sintered compact with a matrix having pores before the heat treatment (i.e. infiltration) (col. 2, line 67 to col. 3, line 2).

With respect to claim 25, JP ('703 A) discloses that the infiltrant blank is placed on a top outer surface of the compact (abstract and Fig. 1).

With respect to claim 27, JP ('703 A) discloses that the infiltrant blank is flat and extents along a bottom plane when placed in contact with the compact.

With respect to claims 29 and 32, the section extending outwardly from the bottom of the blank to the top surface of the compact disclosed by JP ('703 A) (abstract and Fig. 1) would read on the instantly claimed tab. The recess disclosed by JP ('703 A) (abstract and Fig. 1) includes a portion that receives the tab in a mating relationship as instantly claimed.

Response to Arguments

3. The applicant's arguments filed on December 7, 2011 have been fully considered but they are not persuasive.

The applicant argues that it would not be obvious to combine Brophy (US 1,799,500) with Purnell et al. ('908) because making the changes to Purnell et al. ('908) as disclosed by Brophy ('500) would render Purnell et al. ('908) unsatisfactory for its intended purpose and destroy the principle of operation of the part in Purnell et al. ('908). In response, see the new ground of rejection above. Furthermore, the examiner notes that Purnell et al. ('908) discloses a method to infiltrate a cylindrically shaped compact with an infiltrant blank from a wrought metal sheet rather than a method to infiltrate only an inner diameter of a valve guide as asserted by the applicant. The rejection was based on the prior art's broad disclosure rather than preferred embodiments. See MPEP 2123.

Conclusion

4. Applicant's submission of information disclosure statements under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on December 28, 2011 and December 7, 2011 respectively prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emily Le can be reached on 571-272-0903. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Weiping Zhu/
Examiner, Art Unit 1734

/Emily M Le/
Supervisory Patent Examiner, Art Unit 1734
1/30/2012